

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/580,534	MURATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Kiho Kim	4176	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to communication filed on 10/3/07.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____    | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____  |

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## DETAILED ACTION

### *Allowable Subject Matter*

1. Claims 1 – 12 are allowed.

The following is an examiner's statement of reasons for allowance:

#### Re: Claim 1

The prior art of record fails to teach or fairly suggest an infrared sensor comprising:

an output node being a node at which a first terminal of the series capacitor element, a first terminal of the reference capacitor element and a first terminal of the infrared-detecting capacitor element are connected to one another, wherein:

a potential of the output node is brought to a reference potential by applying a predetermined voltage between a second terminal of the series capacitor element and a second terminal of the reference capacitor element;

a potential of the output node is brought to a detection potential by applying the predetermined voltage between the second terminal of the series capacitor element and a second terminal of the infrared-detecting capacitor element; and

the intensity of infrared light is output as a potential difference between the reference potential and the detection potential.

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Re: Claim 4

The prior art of record also fails to teach an infrared sensor array comprising a plurality of infrared sensors arranged in a two-dimensional matrix pattern, wherein each infrared sensor include:

an output node being a node at which a first terminal of the series capacitor element, a first terminal of the reference capacitor element and a first terminal of the infrared- detecting capacitor element are connected to one another, wherein:

a potential of the output node is brought to a reference potential by applying a predetermined voltage between a second terminal of the series capacitor element and a second terminal of the reference capacitor element;

a potential of the output node is brought to a detection potential by applying the predetermined voltage between the second terminal of the series capacitor element and a second terminal of the infrared-detecting capacitor element; and

the intensity of infrared light is output as a potential difference between the reference potential and the detection potential.

Re: Claim 12

The prior art of record also fails to teach an infrared sensor array comprising:

each infrared sensor includes an infrared-detecting capacitor element  
whose capacitance value varies depending on an intensity of infrared light

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incident on the element, and a selection switch whose first terminal is connected to a first terminal of the infrared-detecting capacitor element; and second terminals of the selection switches included in the infrared sensors that are arranged along the same column of the matrix pattern all share the same series capacitor element.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Akagawa et al. (US 5,757,008 A), Kalnitsky et al. (US 2001/0021384 A1), three of Hanson (US Pat. No. 4,745,278A, 4,792,681 A, and 4,902,895 A), Funaki et al. (US 2003/0113783 A1), Soch et al., (U.S. Pat. No. 5,324,944 A), and Sauer et al. (U.S. Pat. No. 5,965,886 A), were reviewed upon examining this application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiho Kim whose telephone number is (571)270-1628. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Nguyen can be reached on (571)272-2402. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K.K./

/Kimberly D Nguyen/  
Primary Examiner, Art Unit 4176